

Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Little Sac River

Waterbody Segment at a Glance:

County: Polk
Nearby Cities: Springfield
Length of impairment: 29 miles
Pollutant: Fecal Coliform
Source: Point and Nonpoint Sources



State map showing location of watershed

Propose to change the source from the Springfield NW Wastewater Treatment Plant to “point and nonpoint sources” on the 2002 303(d) list.
Propose changing the length of impairment from 27 to 29 miles.

TMDL Priority Ranking: Low

Description of the Problem

Beneficial uses of Little Sac River

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life and Human Health associated with Fish Consumption
- Cool Water Fishery
- Whole Body Contact Recreation (Swimming)
- Boating and Canoeing

Use that is impaired

- Whole Body Contact Recreation (Swimming)

Standards that apply

Missouri's Water Quality Standards at 10 CSR 20-7.031(4)(C) state that the fecal coliform count shall not exceed two hundred colonies per one hundred milliliters (200/100 ml) during the recreational season (April 1-October 31) in waters designated for whole-body contact recreation. Federal guidelines also suggest rating waters as impaired if more than 10 percent of all samples exceed 400 bacterial colonies/100 ml or if there are any closures of swimming areas due to high bacteria levels.

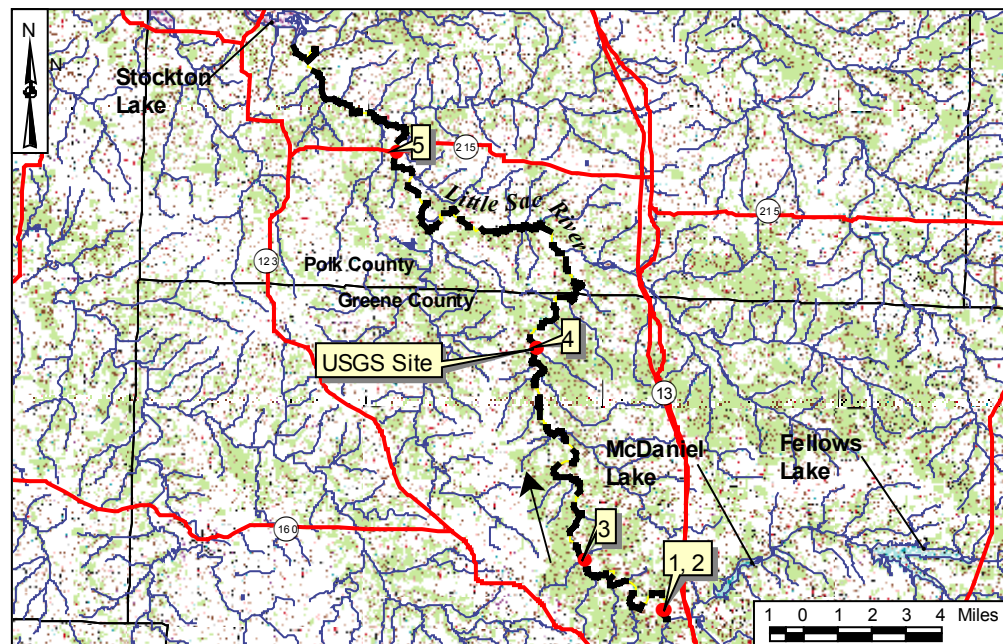
The Little Sac River is a tributary of Stockton Lake within the Osage River Basin. The river begins at the north edge of Springfield as it leaves Fellows Lake and McDaniel Lake. Much of its flow is treated effluent from the Springfield Northwest Wastewater Treatment Plant (WWTP). The Fulbright and Murray landfills lie along the banks of the river and for many years leached low levels of cyanide, toxic metals and organic compounds into the river. When the new Springfield

Northwest WWTP was built, a leachate interceptor drain was built to collect leachate, which was then treated at the plant. Later studies found toxic compounds were only infrequently found in the river. Currently, the landfills are not thought to discharge leachate directly into the river.

The shallow aquifer and karst terrain of sinkholes, springs and caves associated with the Little Sac River allow serious groundwater contamination from transportation and other urban spills, leaking underground tanks and septic tank contamination. Another nonpoint source pollution contributor is a combined sewage and stormwater discharge from the old wastewater treatment plant during excessive rain events. A study done in 1994 by the Department of Natural Resources concluded that water quality gains have been made since the construction of the new Springfield Northwest WWTP, but that past contamination from the old treatment plant, closed landfills, and urban stormwater inputs have created lingering water quality problems.

The Northwest WWTP has had occasional problems with disinfection of its wastewater that have led to the discharge of large amounts of bacteria to the Little Sac River. However, monitoring data shows that on some occasions, higher bacterial levels in the river occurred when the wastewater plant was discharging low levels of bacteria, suggesting that nonpoint sources, upstream and downstream of the wastewater plant are part of the problem. The following information contains a map of the lake area and graphs that summarize the existing data.

Little Sac River in Polk County, Missouri, with Sampling Sites

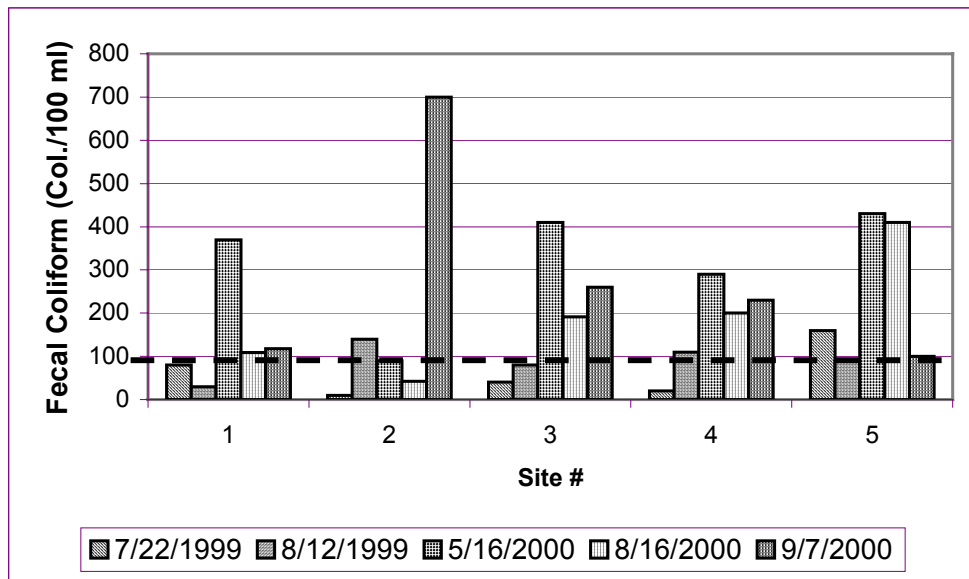


--- Impaired segment → Direction of Flow

Site Index

- 1 – Little Sac River just above Springfield NW WWTP
- 2 – Springfield NW WWTP effluent
- 3 – Little Sac River 3.5 miles below Springfield NW WWTP
- 4 – Little Sac River 12.5 miles below Springfield NW WWTP
- 5 – Little Sac River 23 miles below Springfield NW WWTP

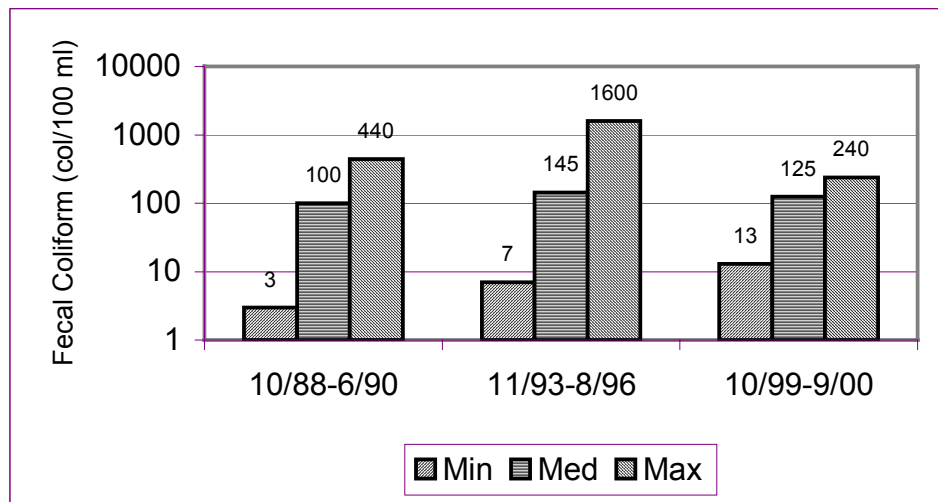
Fecal Coliform concentrations in the Little Sac River, 1999-2000



----- Legal limit for fecal coliform (Colonies/100 ml)

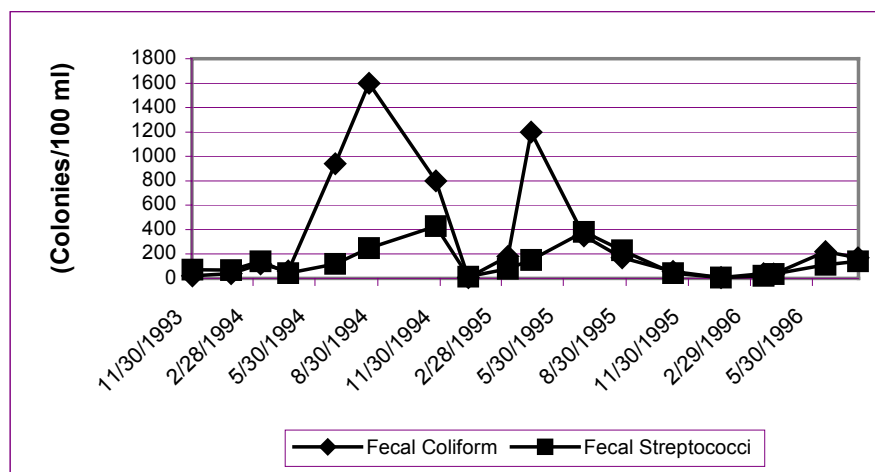
Source: Missouri Department of Natural Resources

Fecal Coliform in the Little Sac River at USGS monitoring site near Walnut Grove



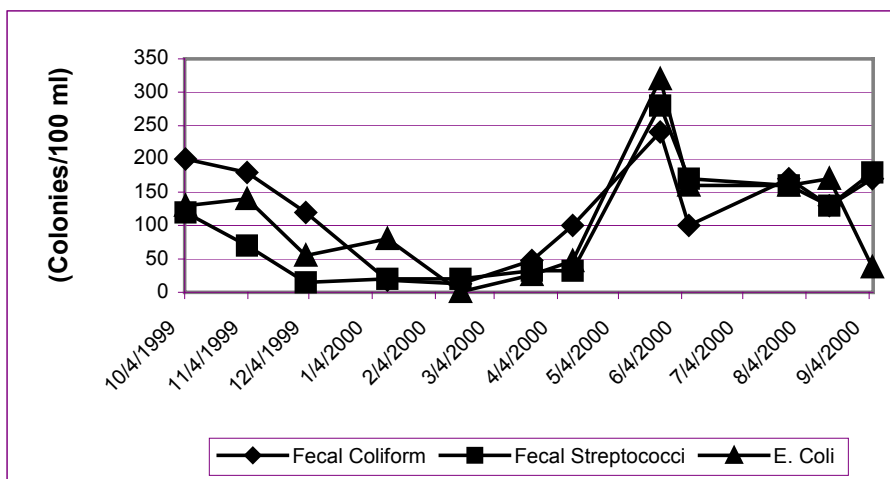
Source: United States Geological Survey

Fecal Coliform and Fecal Streptococci in the Little Sac River at USGS monitoring site near Walnut Grove, 1993-1996



Source: United States Geological Survey

Fecal Coliform, Fecal Streptococci, and E. Coli in the Little Sac River at USGS monitoring site near Walnut Grove, 1999-2000



Source: United States Geological Survey

For more information call or write:

Missouri Department of Natural Resources

Water Pollution Control Program

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